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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,873	02/23/2004	Minoru Itoh	61282-063	7104

7590 09/30/2004

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EXAMINER	
WILLIAMS, HOWARD L	
ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/782,873	ITOH, MINORU	
	Examiner	Art Unit	
	Howard L. Williams	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *022304*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-11of copending Application No. 10/752,040. Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims recites a D/A converter with an offset compensation function that is detected using a comparator with the inherent offset of the comparator also being cancelled by the operation. The claims differ only in that the compensation value determined is added back to the digital-to-analog converter output rather than its input.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ginetti et al. US 5,894,280) in view of Mangahas et al. (US 6,313,769) and Mori (JP 2002111495 A). Ginetti discloses an offset compensation for DAC system which also compensates for offset of the measuring loop comparator through the use of the crossover switches. Ginetti's control logic from its description appears to use a counting approach to derive the digital value of the DAC offset. The offset correction loop of Ginetti serves as a counting type ADC to arrive at the digital value of the DAC offset. Ginetti does not disclose the use of a successive approximation or binary search approach. Mangahas discloses the use of a successive approximation ADC to measure the offset of a DAC used in a transmitter. It is a well recognized principle of successive approximation converters that they require only the number of the steps equal to their resolution as the successive approximation converter steps through and tests each bit in succession and that such converters can be faster than counting type converters which may require 2^N steps using the counting approach. This is readily discernible from the underlying arithmetic. A four bit counter would step 0000, 0001, 0010, 0011, 0100, 0101, 0110, 0111, 1000, 1001, 1010, 1011, 1100, 1101, 1110, 1111. Counting the different steps separated by the commas one has sixteen different steps; as noted above N bit counter can require 2^N steps and $2^4 = 16$. On the other hand a successive approximation approach, assuming 4 bit resolution would require only 4 steps as it tests each one of the 4 bits in succession. It would have been obvious to combine Mangahas and Ginetti to provide the DAC/comparator offset cancellation using successive approximation because successive approximation conversion requires fewer steps than counting converters for large scale values. Mori et al. discloses a DAC system with offset compensation loop where the compensation value is summed with the DAC input

and both are converted in the same converter and a DAC system where the offset compensation is converted separately and summed with the output of a DAC for the regular digital input. In each case the offset of the DAC is compensated. Mori also discloses that analog summation of the offset compensation value avoids overflow of the main DAC from a possible carry bit due to the digital summation. It would have been obvious from the teaching of Mori to employ the analog summation of Mangahas in Ginetti to avoid overflow while still gaining equivalent offset compensation.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. K. Mori (JP 2003008407 A) discloses offset compensation for a DAC. Walker (US 154158) also discloses offset compensation with both digital and analog summation of the determined compensation value.

Any inquiry concerning this communication should be directed to Howard L. Williams at telephone number 571.272.1815. The Patent and Trademark Office has a new central facsimile number for application specific correspondence intended for entry, it is 703-872-9306.

Howard L. Williams

9/24/04
Voice 571.272.1815

Howard L. Williams
Primary Examiner
Art Unit 2819